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ABSTRACT

Until recently, the use of contingency contracting has been largely an issue of theory and discussion with little experimental research evidence gathered to support efficacy. Two major reasons for this problem are suggested and discussed: (1) the concept of contingency contracting has not been adequately defined nor its minimal requirements delineated in terms of an applied behavior analysis; (2) the applications of contingency contracting have not been clearly distinguished from other types of contingency management procedures. This paper resolves the above problems by presenting a set of definitive requirements of contingency contracting from an operant point of view. Accordingly, it focuses attention on the importance of both the discovery and control of relevant consequences of adult behaviors in their natural settings and the reliable measurement of those behaviors. Finally, the paper draws attention to the special characteristics of this technique which distinguish its applications from other types of contingency management procedures. (Author)

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CONTINGENCY CONTRACTING AND OPERANT BEHAVIOR CHANGE:

AN EXERCISE IN APPLIED BEHAVIOR ANALYSIS

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From an operant point of view, the most powerful demonstrations of behavior change are likely to require the discovery and control of relevant consequences of the behavior to be changed. Such a demonstration requires that a number of problems be solved. Among these, the most important are (1) a reliable measurement of the behavior, (2) discovering or supplying relevant consequences, (3) precise and systematic control of relevant consequences, and thereby, (4) an orderly and socially significant change in the behavior under study.

Because of the relative ease of controlling consequences and measuring behavior in controlled or confined settings, numerous applied clinical demonstrations of operant behavior change have been performed both with institutionalized psychiatric patients (Allyon and Azrin, 1968; Boren and Colman, 1970; Mann and Moss, 1973) and with children (Foxx and Azrin, 1973; Lovaas, Schaeffer, and Simmons, 1965). Of the behavior change techniques developed with children, many have displayed effectiveness in natural settings such as in the home (Nordquist and Wahler, 1973; Christophersen, Arnold, Hill, and Quilitch, 1972) and in schools (Barrish, Saunders, and Wolf, 1969). Nevertheless, comparatively few therapeutic techniques with demonstrated effectiveness in natural settings have been developed to deal with the behavior problems of normal non-institutionalized adults.

Two major reasons for this are suggested: First, it is difficult for a therapist to discover and/or gain systematic control over relevant consequences of an adult's behavior in its natural settings. Secondly, even if a therapist did have such control, it would still be difficult to maintain reliable measurement of the behavior. Without reliable measurement, it would be difficult to deliver relevant consequences at appropriate times. Similarly, it would be

difficult to assess any changes that might occur in the behavior. Thus, an applied demonstration of a therapeutic change in behavior could be made, but with difficulty.

A procedure recently discussed by other investigators which appears to have potential as a technique to empirically demonstrate control of many adult behaviors in their natural settings is that of contingency contracting (Homme, 1966; Homme, Csanyi, Gonzales, and Rechs, 1972; Tharp and Wetzel, 1969, Michael, 1970). Its applications as a therapeutic technique have been suggested for use both in school settings with children (Homme et al., 1972; Cantrell, Cantrell, Huddleston, and Woolridge, 1969) and in home settings to help remediate the behavior problems of pre-delinquent adolescents (Tharp and Wetzel, 1969; Stuart, 1971). Other applications have been suggested for the treatment of alcoholism (Miller, 1972) and drug abuse (Boudin, 1972).

The term "contingency contracting" has been commonly described as an explicit statement of contingencies (i.e., a rule), typically in written form and usually agreed upon by two or more people. In other words, it has meant a specification of a number of behaviors whose occurrence could produce specified consequences, presumably to be delivered by parents, teachers, or therapists.

Clearly, it has been demonstrated amply that the management of contingencies can, in fact, change behavior. Nevertheless, until recently, contingency contracting has been largely an issue of theory and discussion with little experimental research evidence gathered to support efficacy. Two major reasons for this are the following: First, the concept of contingency contracting has not been defined adequately nor its minimal requirements delineated in terms of an applied behavior analysis. Second, the applications of contingency contracting have not been clearly distinguished from other types of contingency

management procedures.

This paper will attempt to resolve the above problems by proposing a set of definitive requirements of contingency contracting. It will then draw attention to the special characteristics of this technique which distinguish its applications from other types of contingency management procedures.

CONTINGENCY CONTRACTING

Contingency contracting may be defined as a mutually agreed-upon arrangement between a therapist and one or more clients, such that the therapist maintains control of the treatment variables. The treatment variables should be sufficient to effect mutually agreed-upon behavior changes which cannot be resisted once the contractual agreement has been consumated.

Thus, from an operant point of view, contingency contracting should be designed to facilitate both the discovery and control of relevant consequences of adult behaviors in their natural settings and the reliable measurement of those behaviors. Accordingly, the following definitive requirements of contingency contracting are considered necessary for an applied behavior analysis:

1. A contingency contract should be an explicit agreement (between therapist and client) specifying some behavior(s) to be changed with clear descriptions of the relevant consequences which will follow. Accordingly, a written contract can serve as a reference of the therapeutic procedures by either therapist or client. Presumably, such a reference can function both to maintain consistency of treatment and to minimize any misunderstandings that could arise.
2. The behaviors specified to be changed in the contract should be defined in terms of observable events. Verbal report of behavior change should not be substituted for actual measurements of the behavior change. This will help to

insure a reliable measurement of the specified behaviors. As a consequence of reliable measurement, both assessment of behavior change and the delivery of treatment consequences at appropriate times will be facilitated.

3. Specific contingencies should be incorporated into the contract which will require the client to be available for behavior measurement and the delivery of the specified consequences. Without such requirements, demonstrated behavior change might be difficult. For example, a previous study using a contingency contract for weight maintenance (Mann, 1973) required the subject to be weighed at a specified time and place on a periodic basis. The subject previously had deposited with the researcher a large number of his valuables to be used as consequences. The contract stipulated that if the subject was absent for any weigh-in period, he could permanently lose one of his valuables as a penalty. Thus, the subject's availability for purposes of treatment and assessment was both enforceable and congruent with his previous agreement to be available.

4. The contract should include a clause which gives the therapist management and control over the relevant consequences of target behaviors specified in the contract. For example, the contract could require each client to surrender a large number of his personal valuables or money to the therapist to be used as consequences (Tighe and Elliot, 1968; Mann, 1971; Mann, 1972; Mann, 1973). The client could then earn back portions of those valuables contingent upon meeting the specified behavioral requirements, or lose valuables if those requirements were not met. Thus, if the managed treatment consequences were indeed relevant, behavior change would be realized.

5. Related to the above, the contract should include a clause stipulating that the therapist, at his discretion, could experimentally manipulate the treatment

variables (i.e., the specified consequences); clear descriptions of such procedures should be made explicit. Thus, the contingencies of the contract could be continued or temporarily discontinued in order to assess experimentally the causal variables (cf., Baer, Wolf, and Risley, 1968; Risley, 1970).

6. The client should be a consenting adult. He should sign the contract in front of either a Notory Public or two witnesses, thus helping to legalize the therapist's authority to manage and control the delivery of the specified consequences. Accordingly, such a signed document is, essentially, a statement of informed consent for use of the prescribed treatment. Further, it would be advisable for the therapist to sign the contract, thus insuring to the client that the therapist, similarly, is obligated by law to carry out the terms agreed upon. The therapist signing the contract presumably could help reinforce the client to enter into the contractual agreement of behavior change.

7. Most importantly, it is the thesis of this paper that any contingency contract include a clause which will either insure or facilitate the continued implementation of the agreed-upon contingencies until target behaviors are reached. In other words, a contingency contract like any other good contract, should be enforceable; there should be auxiliary contingencies specified which serve to prevent either party of the contract from terminating their agreement[1]. For example, a previous study which used contingency contracting for weight reduction, required the subject to surrender a large number of his valuables to the therapist to be used as consequences (Mann, 1972). The contract of that study stipulated that if the subject at any time decided to terminate the program (prior to reaching his agreed-upon target weight), then all remaining objects of value in the possession of the researcher became the legal property of the researcher. Thus, that contingency contract functionally locked

the subject into the agreed-upon program of behavior change until its completion. Again, the set of contingencies which serve to prevent the client from terminating the contract is the salient characteristic which distinguishes this technique from other forms of contingency management.

For purposes of explication, contingency contracting may be likened to a "behavior trap." A behavior trap is basically a situation in which, "only a relatively simple response is necessary to enter the trap, yet once entered, the trap cannot be resisted in creating general behavior change" (Baer and Wolf, 1970, p. 321; cf., Baer, Rowbury, and Goetz, 1971). Many normal transactions in society are, in fact, behavior traps. For example, "buying on time" consists of placing a down payment on a house, car, or other commodity and signing an agreement to make regular specified payments until the item is paid in full. The paying of the down payment and signing the agreement may be conceptualized as "the relatively simple response" required of an individual to enter the behavior trap. Yet once these responses have been made, the "trapped" individual is required to continue making regular payments or be penalized by fines, greater interest, or both. Furthermore, the trapped individual could terminate making payments before the item was paid in full, only if he forfeited his equity and the article itself. Thus, the contingencies of buying on time presumably can act as a behavior trap by facilitating an individual to maintain whatever behaviors are necessary in order to generate regularly scheduled payments over an agreed upon period of time. Other typical examples of behavior traps are getting married, having a child, and joining the armed services. All require relatively simple responses, initially, but as a consequence bring the individual into contact with contingencies which affect future behaviors over extended periods of time.

CONTINGENCY MANAGEMENT

Contingency management may be defined as any procedure which specifies target behaviors and controls the relevant consequences of those target behaviors in order to effect specified behavior change. Thus, contingency contracting, as a specialized technique, is but one type of contingency management procedure. That is, it too specifies target behaviors and provides for the systematic control of relevant consequences of those behaviors.

Contingency management procedures may be divided into two general categories; one in which the recepient of treatment consents to that treatment, and the other in which the recipient of treatment, typically, is not offered the opportunity to give his consent.

The first case refers to the traditional therapist-client type of relationship. In that instance, the therapist specifies or prescribes the treatment modality (i.e., a contingency management procedure) and the recipient of treatment (the client) can either agree or not agree to the terms of therapy. For example, a therapist might prescribe that a client engage in specified reinforcing activities only after completing some agreed upon increment of behavior change whose increase in rate is considered important by both parties. Or, a therapist might design an explicit agreement between a husband and wife who are having marital problems. The agreement between both husband and wife might specify a number of behaviors to be engaged in by each spouse. The occurrence of a specified behavior by one of the spouses, for example, could produce specified consequences, presumably to be delivered by the other spouse, and vice versa.

It should be pointed out that components of this type of "consensual"

contingency management may appear similar to contingency contracting because this procedure can include an "explicit statement of contingencies agreed upon by two or more people." Nevertheless, the important point to consider is that either party of such an agreement (i.e., therapist or client, husband or wife) may terminate treatment and the agreed-upon contingencies at any time, for any reason. Indeed, consent or agreements, as forms of verbal behavior, are not necessarily related to the "agreed-upon" treatment contingencies which only if maintained, presumably would change those behaviors specified in an agreement. Specifically, traditional therapist-client contingency management relationships typically do not make provisions to maintain or insure the control and continuation of relevant contingencies. That is, they are not enforceable. Contingency contracting procedures, on the other hand, are enforceable.

The second category of contingency management procedures includes the use of relevant consequences contingent upon specified behaviors without the explicit consent of the recepient of that treatment. The examples of this category of procedures are numerous. They include teacher-programmed contingencies with students in classroom settings and parent-programmed contingencies with children in the home. In both of these instances, the contingency manager (i.e., teacher or parent) may specify the rules (i.e., a statement of contingencies) and, accordingly, deliver relevant consequences contingent upon specified target behaviors.

Although "agreements" may be made between teacher and students or parents and children which involve an "explicit statement of the contingencies" (cf., Homme et al., 1972; Stuart, 1972), such agreements may be unnecessary to the extent that teachers or parents already have control over relevant consequences. In other words, teachers or parents need not obtain permission

from students or children in order to make use of available contingencies. An announcement of the contingencies and their implementation by the contingency manager may be all that is necessary to effectively control behavior. Furthermore, soliciting an agreement in order to implement a needed contingency management program could pose serious problems. Among these would be the problems encountered when a student or child simply refused to agree with a proposed program or contract. Certainly, such a refusal if honored, by a teacher or parent, could leave unchanged serious behavior problems or academic deficiencies in children or students. To the extent that a refusal would not be honored, agreements and contingency contracting with children should not be solicited.

SUMMARY

In summary, the design requirements of contingency contracting suggested in this paper differ from those previously discussed by other investigators (Homme et al., 1972; Cantrell et al., 1969; Tharp and Wetzel, 1969; Stuart, 1971; Stuart, 1972). The contracting procedures they suggested were essentially an explicit statement of contingencies, usually agreed upon by two or more people. Nevertheless, the addition of an "agreement" to already tested contingency management procedures has not been demonstrated, either logically or empirically, to have any greater effectiveness on behavior than the actual contingency procedures themselves.

The contingency contracting procedure proposed in this paper also included an explicit statement of contingencies. However, it incorporated additional features considered salient both to effectiveness and to applied clinical research. In addition, it has been suggested that a central feature of contingency contracting is the incorporation of contingencies which insure or

facilitate the continued implementation of treatment procedures until target behaviors are reached (i.e., enforceability). Thus, contingency contracting is essentially a modified contingency management technique which acts as a behavior trap by locking a client into an agreed-upon program of behavior change in a demonstrable manner.

To conclude, it is proposed that properly designed contingency contracts may be an effective technique to facilitate the remediation or control of some operant behavior problems of non-institutionalized adults. The probability of this is increased to the extent that such techniques can facilitate a therapist both in gaining systematic control of effective consequences and in maintaining reliable measurement of the behavior to be changed.

FOOTNOTES

[1] In society, for example, the law partially provides such auxiliary contingencies when legal contracts are drawn up and signed. As a case in point, a legal contract has been defined as "... an agreement to do or not to do a certain thing... It gives rise to an obligation or legal duty enforceable* in an action at law" (Witkin, 1960).

* Underlining, the present author.

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